

HHI-041US

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C.371**

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/070781

INTERNATIONAL APPLICATION

PCT/DE00/03125

INTERNATIONAL FILING DATE

08 September 2000 (08.09.00)

PRIORITY DATE CLAIMED

09 September 1999 (09.09.99)

TITLE OF INVENTION

FILTER WITH A VALVE COMBINATION COMPONENT

APPLICANT(S) FOR DO/EO/US

Dieter BAUMANN, et al.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C.371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
4. ☐ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
- a. ☐ is attached hereto (required only if not communicated by the International Bureau).
- b. ☒ has been communicated by the International Bureau.
- c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
- a. ☐ are attached hereto (required only if not communicated by the International Bureau).
- b. ☐ have been communicated by the International Bureau.
- c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
- d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). **(unexecuted) (4 Sheets);**
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98;
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included
13. ☐ A **FIRST** preliminary amendment
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: **PCT International Published Application (WO01/03125 A2) (without International Search Report attached) (15 sheets); International Search Report (4 sheets); International Preliminary Examination Report (11 sheets); Certificate of Express Mailing (1 sheet); and Return Postcard.**

10/070781

17. ☒ The following fees are submitted:

CALCULATIONS PTO USE ONLY

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) .(a/o November 1, 2000):Neither international preliminary examination fee (37 CFR 1.482)
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO
and International Search Report not prepared by the EPO or JPO.....\$1040International preliminary examination fee (37 CFR 1.482) not paid to
USPTO but International Search Report prepared by the EPO or JPO\$890International preliminary examination fee (37 CFR 1.482) not paid to USPTO but
international search fee (37 CFR 1.455(a)(2)) paid to USPTO\$740International preliminary examination fee paid to USPTO (37 CFR 1.482)
but all claims did not satisfy provisions of PCT Article 33(1)-(4).....\$710International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(1)-(4).....\$100

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$890.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☒ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$130.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	4-20 =	0	X \$18.00
Independent claims	2-3 =	0	X \$84.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ 280.00

\$

\$

\$

TOTAL OF ABOVE CALCULATIONS =

\$1020.00

☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above
are reduced by 1/2.

\$

SUBTOTAL =

\$1020.00

Processing fee of \$130.00 for furnishing the English translation later than ☒ 20 ☐ 30
months from the earliest claimed priority date (37 CFR 1.492(f)).

\$130.00

TOTAL NATIONAL FEE =

\$1150.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +

\$

TOTAL FEES ENCLOSED =

\$1150.00

Amount to be:
refunded

\$

charged

a. ☐ Check in the amount of \$ _____ to cover the above fees is enclosed.b. ☒ Please charge my Deposit Account No. 12-0080 in the amount of \$ 1150.00 to cover the
above fees. A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit
any overpayment to Deposit Account No. 12-0080. A duplicate copy of this sheet is enclosed.**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR
1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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Date: 11 March 2002

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NAME

38,220

REGISTRATION NUMBER

100740710 / 070701

JC20 Rec'd PCT/PTO 1-1 MAR 2002

(Atty. Docket No.: HHI-041US)

**IN THE UNITED STATES PATENT DESIGNATED OFFICE (DO/US)
(National Phase of International App.: PCT/DE00/03125, W/O 01/17658 A2)**

In re the
application of: **Dieter BAUMANN, et al.**

International Application No.: **PCT/DE00/03125**

International Filing Date: **08 September 2000**

U.S. Serial No.: **Not Yet Assigned**

Filed: **Herewith**

For: **FILTER WITH A VALVE COMBINATION
COMPONENT**

Attorney Docket No.: **HHI-041US**

BOX PCT
Commissioner for Patents
Washington, D.C. 20231

Certification Under 37 CFR 1.10

I hereby certify that the attached:

Transmittal Letter (2 sheets in duplicate); Unexecuted Declaration, Petition and Power of Attorney (4 sheets); PCT International Published Application (WO 01/17658 A2) (without International Search Report attached) (15 sheets); International Search Report (4 sheets); International Preliminary Examination Report (11 sheets); Certificate of Express Mailing (1 sheet); and Return Postcard are being deposited by me with the United States Postal Service "Express Mail Post Office to Addressee" service, Mailing Label No. **EL 939 600 671 US**, under 37 CFR 1.10 on the date indicated below and is addressed to the Box PCT, Commissioner for Patents, Washington, D.C. 20231.

Date: **11 March 2002**

Name: **Ilidio P. Cardoso**

Signature: 

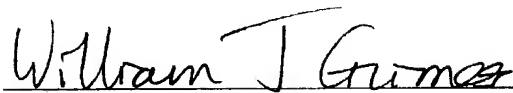
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File HHI-041 US

VERIFICATION OF TRANSLATION

I hereby declare and state that I am knowledgeable of each of the German and English languages and that I made and reviewed the attached translation of the attached patent application entitled "Filter with Combined Valve Component" from the German language into the English language, and that I believe my attached translation to be accurate, true, and correct to the best of my knowledge and ability.

Date: March 28, 2002



William J. Grimes
Translator

- 1 -

FILTER WITH COMBINED VALVE COMPONENT

The invention relates to a filter according to the preamble of claim 1. Such filters are familiar from DE-U-296,10,290 or from practice, for example, as oil
5 filters for internal combustion engines in the automobile industry. The filter in DE-U-296,10,290 has a drain valve and a check valve which must be installed separately in the filter housing. A filter which was disclosed in EP-A1-692,292 has a check valve which is molded in along with a hollow mounting screw.

10 Here the check valve is opened by the pressure built up by the engine when the oil enters the filter. When the engine is off and the oil pressure has dropped, the check valve closes, thereby retaining a minimum quantity of oil within the filter.

15 A filter bypass valve may be provided, for example, to ensure a kind of short-circuit operation of the filter in the event that the filter medium is heavily contaminated or is too viscous. In this case, given a predetermined overpressure on the unfiltered-oil side of the filter, the filter bypass valve opens, thereby creating a passage to the filter outlet which is provided for the filtered oil.

20 In addition, a drain valve may be provided which opens in response to the motion of the cover and filter insert when the filter is opened to change the filter insert, the purpose being to allow the oil retained inside the filter housing to be drained. This feature allows for essentially contamination-free removal of the filter insert.

25 The goal of the invention is to improve a filter according to the species so that it can be fabricated as inexpensively as possible and, especially, to be installed very quickly.

30 This goal of the invention is achieved by a filter with the features of claim 1.

The invention proposes, in other words, incorporating multiple valve functions supplementary to the basic valve function in one combination component, for example, multiple valve functions. This approach, which uses prefabricated modules,
35 enables quick installation of the filter. Specifically, when parts of the filter such as the filter base are provided on the engine housing in integrally-cast, single-piece form, the assembly or completion for final fabrication of the filter is performed in the automobile

plant. In place of fully automated fabrication of a complete filter by the filter manufacturer, production is partially transferred to the automobile manufacturer – with the result that considerable simplification of the assembly process, and thus a more cost-effective production process, may be achieved by the reduction in the number of components to be assembled.

In addition to the normally provided first valve, for example the check valve, the combination component may have either the bypass valve or the drain valve, or both if required, such that complete valves may be provided which each have the movable valve body as well as the sealing surface designated as the valve seat associated with the valve body.

An alternative approach may be to wait until final assembly of the filter to create a functional filter. This approach permits especially simple pre-assembly of the combination component since said component accommodates the valve bodies in such a way that they do not yet rest on the valve seats and are thus very easily accessible and may therefore accordingly be simply and quickly installed. The associated valve seats may, on the other hand, be formed, for example, by the filter housing or filter base, or by the filter insert.

As an alternative to an arrangement with one or more additional valves, the combination component may be connected or connectable to other components of the filter to enable rapid assembly through highly integrated modules. For example, the combination component may be connected to a filter insert or to a conventional support dome for the filter insert. The filter insert must often, depending on filter type, be installed in the automobile plant in any event so that the now possible simultaneous installation of one or multiple valves enables steps in the work process to be eliminated.

In the case of a component connected to the filter insert subject to regular replacement, the filter insert may advantageously be connected in a detachable manner to the combination component, for example, through a weakly retaining clip or snap-on connection, so that both may be installed together as a single module. The combination component may, however, then remain in the filter as a filter-fixed permanent component, in an environmentally benign and economical manner, to be readily detached from the filter insert when the filter insert is changed.

The following discussion uses the drawings to explain embodiments of the invention relating to filter types having a decentralized oil drain.

Figures 1a – 1d show a first embodiment, with Figures 1a – 1c showing the entire filter at various stages of operation and Figure 1d showing the combination component alone.

Figures 2 and 3 each show another embodiment.

Figures 4a – 4b show another embodiment, also at various stages of operation.

Figure 1a shows a filter 1, an oil filter for an internal combustion engine, at the stage with the engine turned off. Filter 1 has a filter housing 2 and a cover 3, as well as a replaceable filter insert 4. Filter insert 4 encloses an internal cavity 5 in which a support dome 6 is located to prevent collapse of the filter material of filter insert 4 under the pressure and temperature conditions prevailing in the oil filter.

Support dome 6 holds a valve body 7 of a filter bypass valve 8. When the pressure outside filter insert 4 is high, valve body 7 is pressed downward, thereby opening a flow passage between valve body 7 and its associated valve seat which is formed by a collar 9 which is in turn formed by an upper end plate 10 of filter insert 4.

Additional valves of filter 1 are provided in the form of two essentially identically shaped valves which each have a valve body 12 in the form of a lamella and which function as check valve 11 and drain valve 22. Valve bodies 12 are each supported by a compression spring against base plate 14 of a combination component 15, the details of which are shown in Figure 1d:

Holders 16 for check valve 11 and drain valve 22 are provided on base plate 14, against which holders valve bodies 12 are pressed by springs 17. This feature ensures that valve bodies 12 are permanently held in combination component 15 so that combination component 15 is pre-assembled and ready for shipping and assembly of combination component 15 is facilitated upon insertion into filter housing 2.

In addition, combination component 15 has a tubular sleeve 18. Tubular sleeve 18 supports a seal 19 made, for example, of an elastomer, and a retaining ring 20

made, for example, of metal which is located in an undercut of elastic retaining claws 21. Due to its expansion force, retaining ring 20 is able hold tubular sleeve 18 within the filter base without any undercuts being necessary, with the result that expensive further working of the filter base to accommodate retaining claws 21 is not required.

5

Figure 1b shows the normal operating configuration for filter 1. Here, valve 12 of check valve 11 has been lifted by oil which has entered filter 1 through an inlet 23. Filtered oil passes through outlet 31 to the lubricating points. Drain valve 22, on the other hand, is closed since its valve body 12 rests on the associated valve seat
10 formed by filter housing 2 preventing any oil from passing from the filter interior above combination component 15 into drain passage 32.

Figure 1c shows the operating configuration during the "filter change" in which only filter insert 4 is changed, not the complete filter 1. It is evident here that
15 cover 3 has been lifted from filter housing 2.

Tubular sleeve 18 of combination component 15 is clipped on to support dome 6, support dome 6 extending, by means of several retaining claws 24, behind a collar 25 provided on tubular sleeve 18. Tubular sleeve 18, and therefore the entire
20 combination component 15, is thus lifted along with cover 3 relative to filter housing 2, for example by a clamping fit of filter insert 4 on support dome 6 due to the sealing interconnection of these components, or by the action of a spring 27.

Retaining ring 20 limits the upward travel of combination component 15,
25 either by its clamping action alone or with the aid of a circumferential groove which is provided in filter housing 2 and which secures a fixed-height position of retaining ring 20 in filter housing 2. As Figure 1c shows, in this raised position of combination component 15, valve body 12 of drain valve 22 has been lifted off its associated valve seat, allowing residual oil to enter drain passage 26 from internal cavity 5, and from
30 entire filter housing 2. The thread length between cover 3 and filter housing 2 here allows for complete drainage of this residual oil such that, when filter insert 4 is removed from filter housing 2, the residual oil has dripped off filter insert 4 leaving essentially no residue.

35 Figure 2 shows a second embodiment in which check valve 11 and drain valve 22 have, unlike the first embodiment, different valve bodies 12, these valve bodies 12 being of similar or identical design to valve body 7 of the filter bypass valve. In this

embodiment, combination component 15 forms both base plate 14 and support dome 6, so that, with the installation simply of this one module, namely, that of combination component 15, all valve functions are installed in filter 1. The especially simple fabrication and installation of combination component 15 is also facilitated in this
5 embodiment by the fact that the valve seats associated with valve bodies 7 or 12 are not provided in this combination component 15 but are provided in the housing or in filter insert 4.

The embodiment in Figure 3 shows a combination component 15 of
10 similar design to the embodiment in Figure 2, however, one which, like the embodiment in Figure 1 is fabricated separately from support dome 6 and is subsequently simply connected to support dome 6 in the manner familiar from Figure 1. This embodiment has the especially cost-effective feature of being adaptable to filters of different dimensions by using different support domes 6. In an especially simple manner, the use
15 of filter inserts 4 of differing heights allows for adaptation to the filter surface specifically required, while always permitting the use of identical filter housings 2, meaning that only covers 3 must be of different heights.

Figures 4a and 4b show an embodiment in which tubular sleeve 18 is
20 designed as a separate component of combination component 15, this design allowing for simple adaptation to the specific outlet of different filter types using a standardized base plate 14. This tubular sleeve 18 of Figures 4a and 4b is not held by a retaining ring 18 in filter housing 2. In addition, tubular sleeve 18 also forms, in this embodiment, the movable valve body of the filter bypass valve which is provided, in this embodiment,
25 below filter insert 4.

Figure 4a shows filter 1 in the operating configuration with the engine off. Both check valve 11 and drain valve 22 are closed. Tubular sleeve 18 is pressed by the action of spring 27 against base plate 14 of combination component 15.

30 Figure 4b, on the other hand, shows the operational configuration in which the engine is running and a specific oil pressure has built up. For example, during a cold start the oil pressure may reach a level due to the high oil viscosity at which the filter bypass valve opens. First the oil passes through inlet 23 to valve body 12 of check
35 valve 11 and opens this valve. The oil continues to flow and disperses in the internal cavity of filter housing 2 around filter insert 4. Due to its high viscosity, the oil does not flow quickly enough into internal cavity 5 – with the result that an overpressure

develops outside filter insert 4 within filter 1, which pressure ultimately presses on a flange plate 28 of tubular sleeve 18 so that tubular sleeve 18 is pressed downward against the action of spring 27. Multiple windows 29 are provided between retaining claws 30 by which tubular sleeve 18 is connected to base plate 14. The oil now passes
5 through these windows directly into outlet 31 which is intended for the filtered oil. In this embodiment, filter bypass valve 8 is thus formed by tubular sleeve 18 and base plate 14 so that, in this embodiment as well, all valve functions are carried out in combination component 15.

10 The embodiments presented relate exclusively to filter types in which the drain is located decentrally in the manner of drain passage 32, i.e., running radially outside the outlet, for example, axially parallel. Other known filters exist which have a so-called central drain. Here the oil first flows through a separate flow channel provided
15 within the outlet opening which runs, for example, coaxially around the actual outlet channel separated by a partition, and which then branches off from the outlet. Filters of this type with a central outlet may also be advantageously designed according to the invention.

1. Filter such as an oil filter for an internal combustion engine, with a filter housing, and with a valve located in the filter housing, such as a check valve, a filter bypass valve, or a drain valve, characterized in that the valve body of this valve is located in a combination component (15), and that the combination component (15) has
5 a connector for connecting at least one additional filter component such as an additional valve or a filter insert (4) to the combination component (15).
2. Filter according to claim 1, characterized in that the combination component (15) has a base plate (14) on which the valve body of the valve is elastically
10 supported by a spring, the valve seat associated with the valve body being disposed separately from the combination component (15).
3. Filter according to claim 2, characterized in that the base plate (14) has an opening to which a tubular sleeve (18) is connected, which sleeve forms the valve
15 body for the drain valve and/or the filter bypass valve (8).
4. Filter according to claim 3, characterized in that the tubular sleeve (18) is designed as a component which is separate from the base plate (14).
- 20 5. Filter according to one of the foregoing claims, characterized in that the combination component (15) has a connector to which a filter insert (4) is detachably attached or attachable.

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES
PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
Internationales Büro



(43) Internationales Veröffentlichungsdatum
15. März 2001 (15.03.2001)

PCT

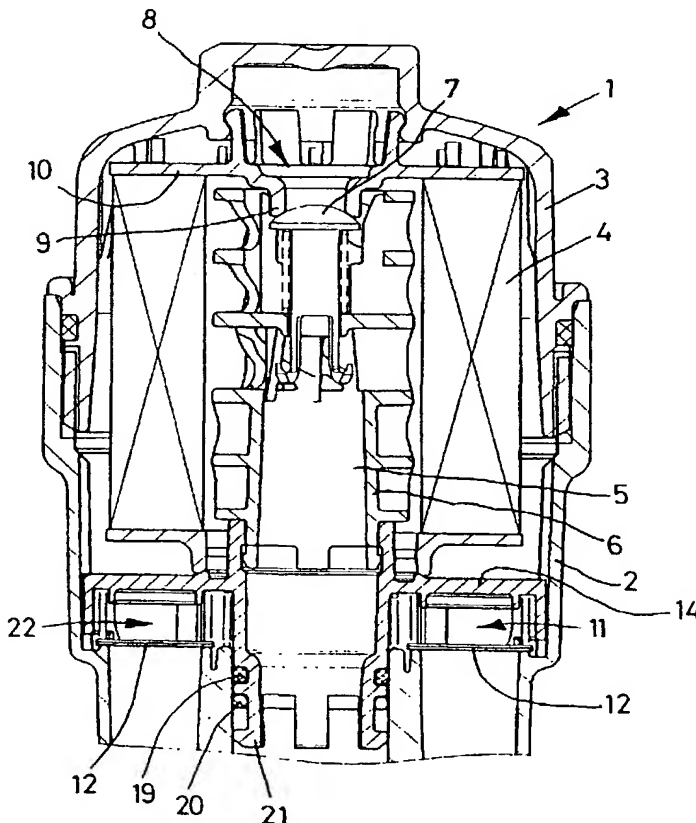
(10) Internationale Veröffentlichungsnummer
WO 01/17658 A3

- (51) Internationale Patentklassifikation⁷: **B01D 29/21**, 29/96, 35/147 (71) Anmelder (für alle Bestimmungsstaaten mit Ausnahme von US): **ING. WALTER HENGST GMBH & CO. KG** [DE/DE]; Nienkamp 75, 48147 Münster (DE).
- (21) Internationales Aktenzeichen: **PCT/DE00/03125** (72) Erfinder; und (75) Erfinder/Anmelder (nur für US): **BAUMANN, Dieter** [DE/DE]; Überwasserstrasse 10, 48268 Greven (DE). **ARDES, Wilhelm** [DE/DE]; Albert-Koch-Strasse 21 b, 59387 Ascheberg (DE).
- (22) Internationales Anmeldedatum: 8. September 2000 (08.09.2000)
- (25) Einreichungssprache: **Deutsch**
- (26) Veröffentlichungssprache: **Deutsch** (74) **Anwalt: HABEL & HABEL**; Am Kanonengraben 11, 48151 Münster (DE).
- (30) Angaben zur Priorität: 299 15 844.6 9. September 1999 (09.09.1999) **DE** (81) Bestimmungsstaaten (national): **BR, JP, KR, US**.

[Fortsetzung auf der nächsten Seite]

(54) Title: **FILTER WITH A VALVE COMBINATION COMPONENT**

(54) Bezeichnung: **FILTER MIT VENTIL-KOMBINATIONSBAUTEIL**



(57) Abstract: The invention relates to a filter, such as an oil filter for a combustion engine. The inventive filter comprises a filter housing and a valve, such as a non-return valve, a filter bypassing valve or a drain valve, that is arranged in the filter housing. According to the invention, the valve body of said valve is arranged at a combination component which is provided with connecting means for connecting at least one additional filter component, such as an additional valve or a filter inset, to the combination component.

(57) Zusammenfassung: Bei einem Filter, wie einem Ölfilter für eine Verbrennungskraftmaschine, mit einem Filtergehäuse, und mit einem im Filtergehäuse angeordneten Ventil, wie einem Rückfluss-Sperrventil, einem Filterumgehungsventil oder einem Ablassventil, schlägt die Erfindung vor, dass der Ventilkörper dieses Ventils an einem Kombinationsbauteil angeordnet ist, und dass das Kombinationsbauteil Anschlussmittel aufweist zum Anschluss wenigstens eines weiteren Filterbauteils, wie eines weiteren Ventils oder eines Filtereinsatzes, an das Kombinationsbauteil.

WO 01/17658 A3

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FIG.1b

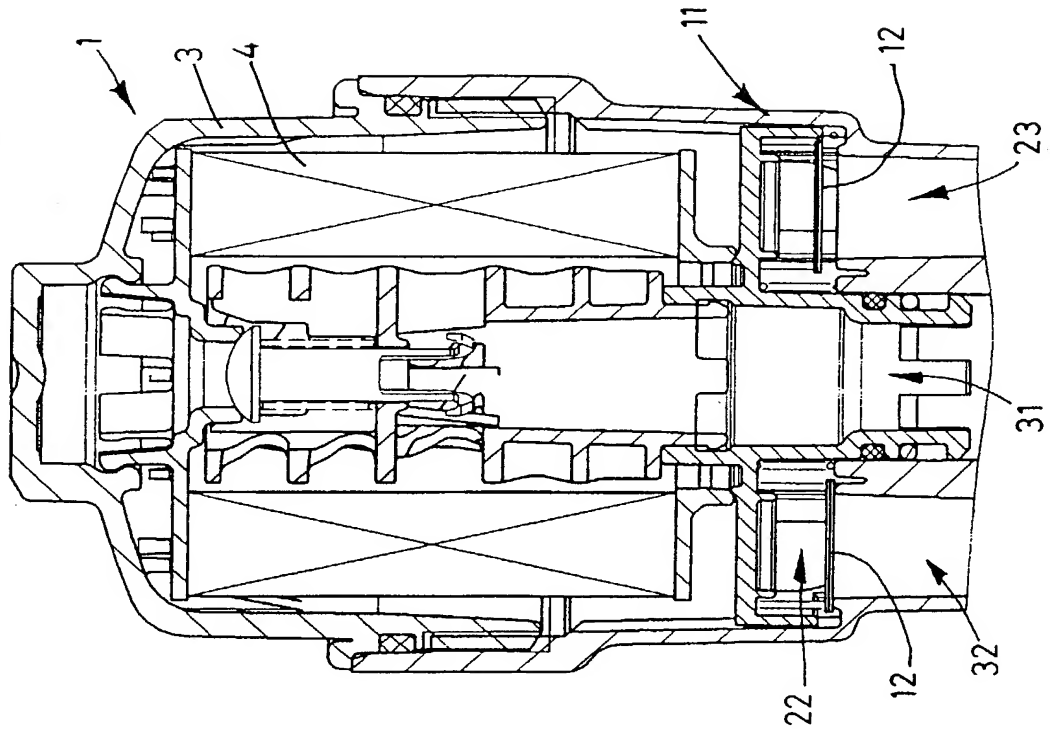


FIG.1a

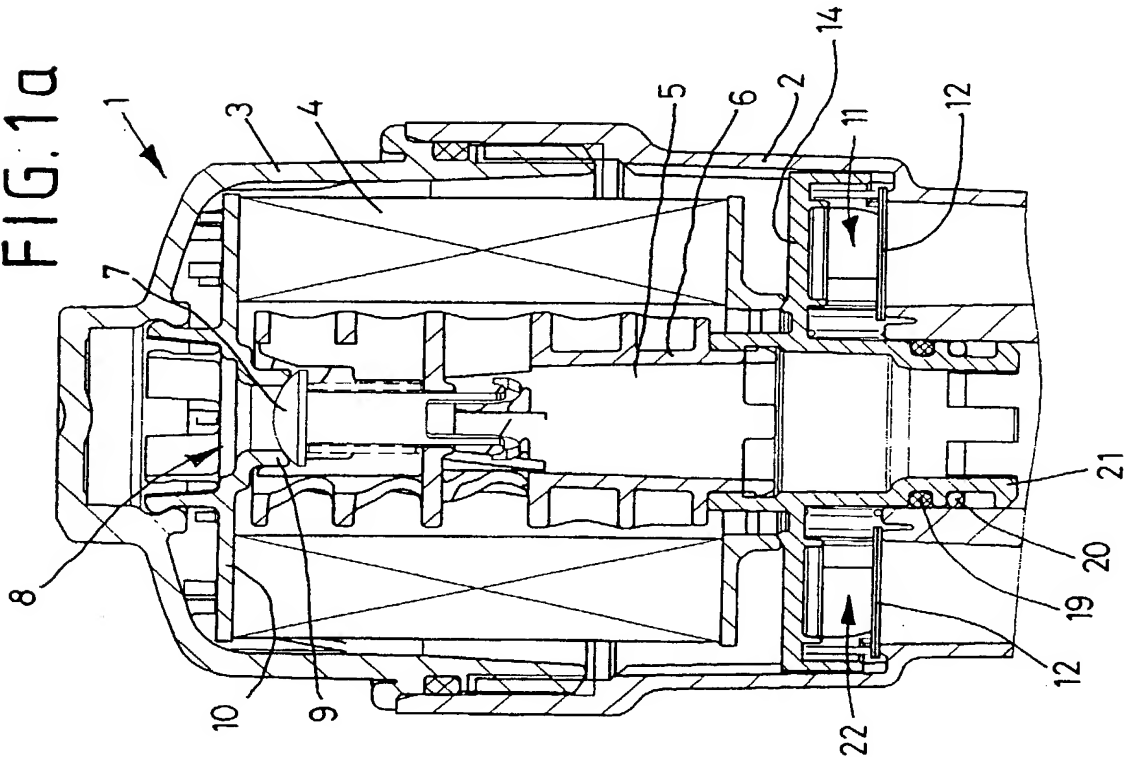


FIG. 1c

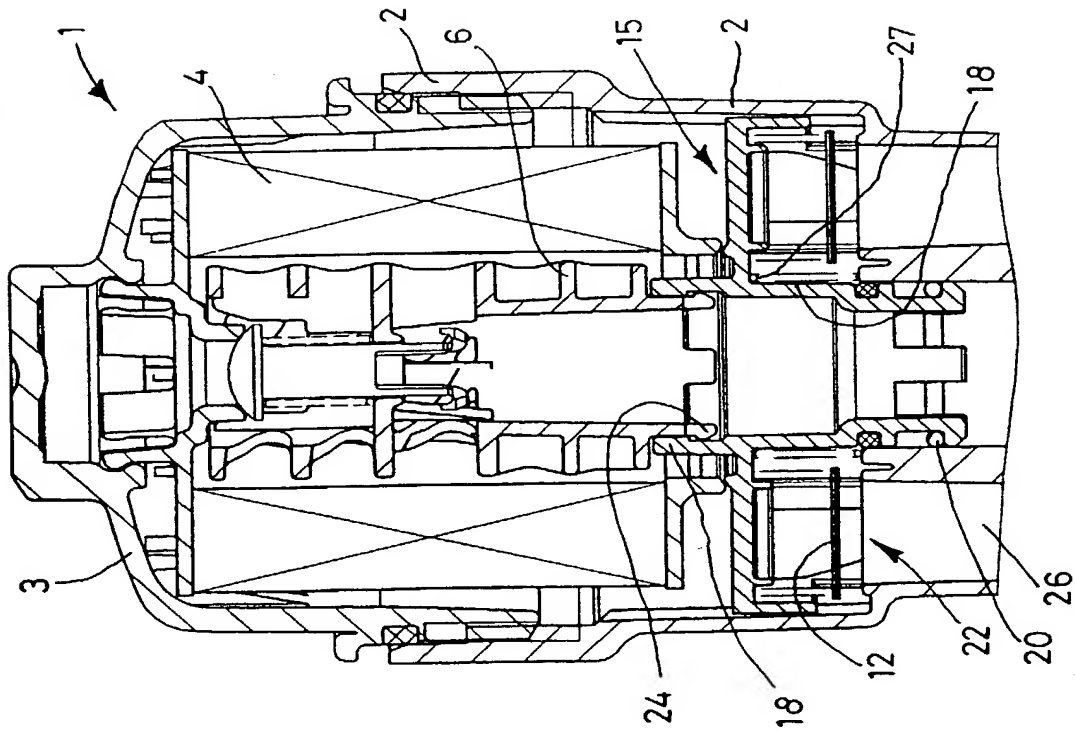
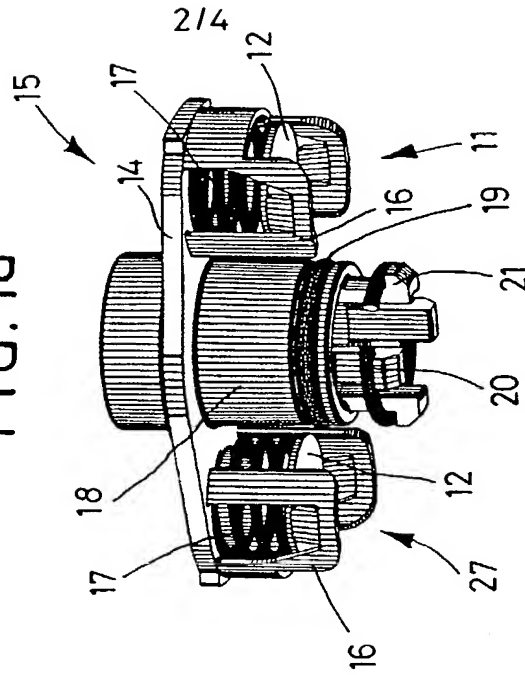
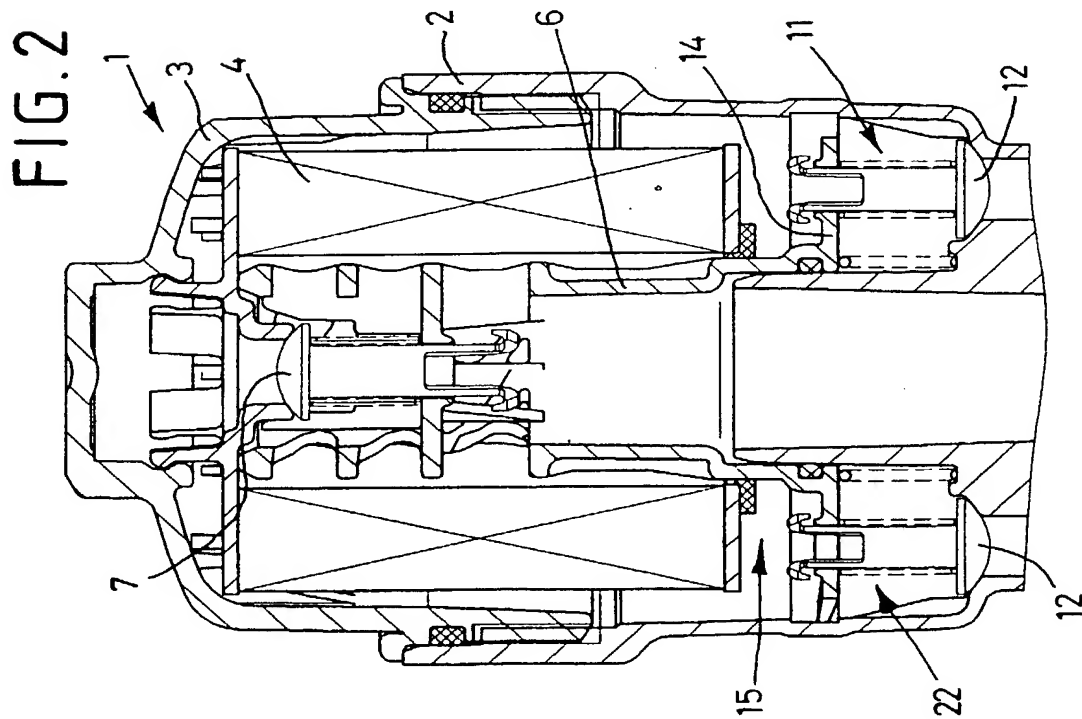
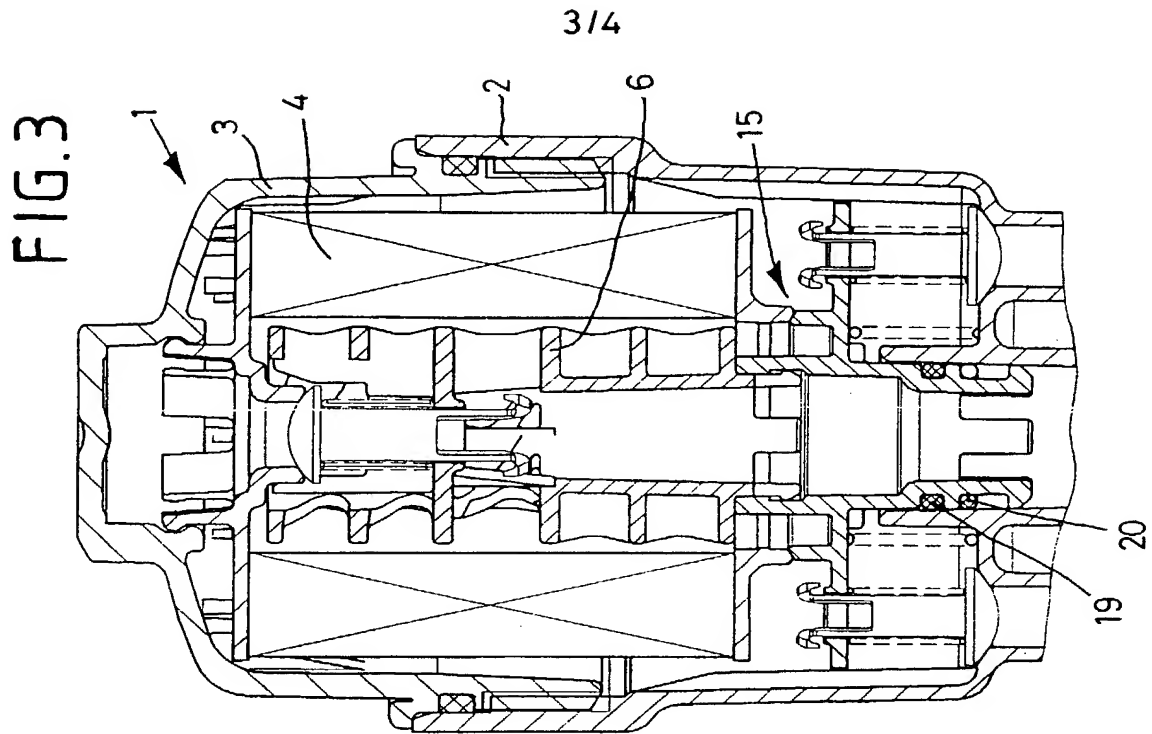


FIG. 1d





4/4

FIG. 4b

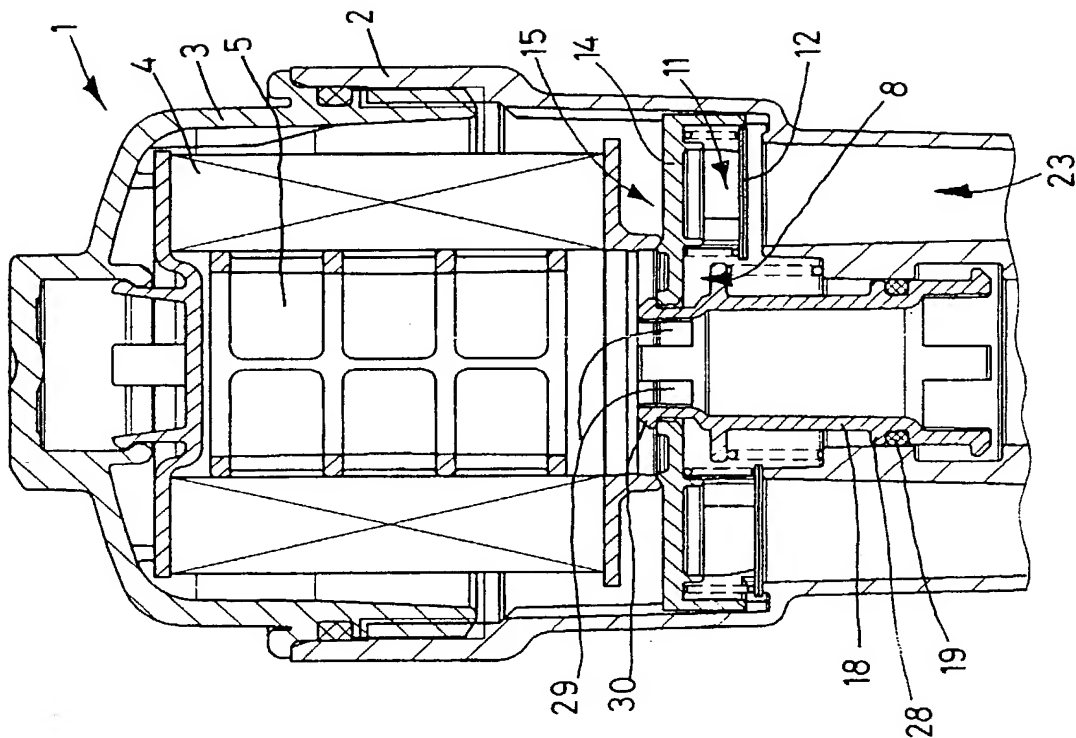
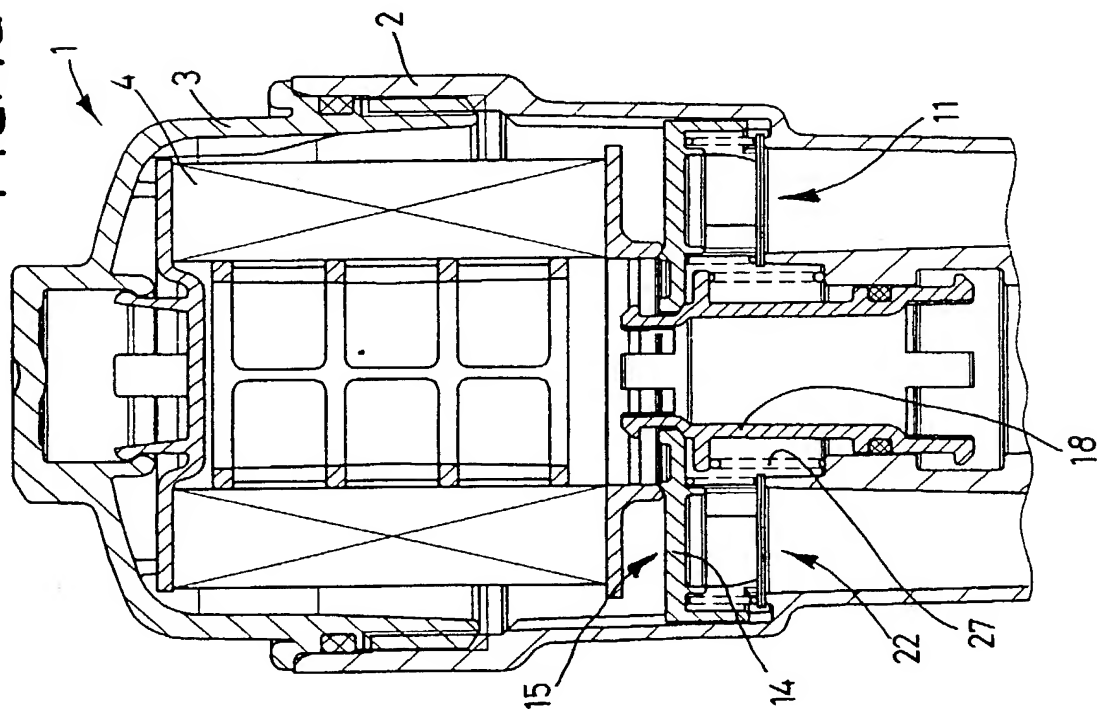


FIG. 4a



**DECLARATION, PETITION AND POWER OF ATTORNEY
FOR PATENT APPLICATION**

(Check one):

- ☐ Declaration Submitted with Initial Filing
☒ Declaration Submitted after Initial Filing

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

FILTER WITH A VALVE COMBINATION COMPONENT

the specification of which (check one):

- ☐ is attached hereto.
OR
☒ was filed on 08 September 2000 as PCT International Application Number PCT/DE00/03125 and filed as USSN 10/070781.
☐ and was amended by PCT Article 19 Amendment on _____
(if applicable),
☐ and was amended by PCT Article 34 Amendment on _____
(if applicable).

I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

PRIORITY CLAIM

(Check one):

- ☐ no such applications have been filed.
- ☒ such applications have been filed as follows

1) FOREIGN PRIORITY CLAIM: I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or any PCT international application having a filing date before that of the application on which priority is claimed

Prior Foreign Application Number(s)	Country	Foreign Filing Date (dd,mm,yyyy)	Priority Not Claimed	Certified Copy Attached	
				Yes	No
299 15 844.6	DE	09 September 1999 (09.09.1999)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto.

2) PROVISIONAL PRIORITY CLAIM: I hereby claim the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

Provisional Application Number(s)	Filing Date (dd/mm/yyyy)

☐ Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

3) U.S./PCT PRIORITY CLAIM: I hereby claim the benefit under Title 35, United States Code, §120 of any United States application or §365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date (dd/mm/yyyy)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority sheet attached hereto.

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

James E. Cockfield	Reg. No. 19,162	Jeremiah Lynch	Reg. No. 17,425
Thomas V. Smurzynski	Reg. No. 24,798	David J. Ridders	Reg. No. 43,882
Ralph A. Loren	Reg. No. 29,325	Maria C. Laccotripe	Limited Recognition
Giulio A. DeConti, Jr.	Reg. No. 31,503		Under 37 C.F.R. § 10.9(b)
Ann Lamport Hammitte	Reg. No. 34,858	Debra J. Milasincic	Reg. No. 46,931
Elizabeth A. Hanley	Reg. No. 33,505	David R. Burns	Reg. No. 46,590
Amy E. Mandragouras	Reg. No. 36,207	Sean D. Detweiler	Reg. No. 42,482
Anthony A. Laurentano	Reg. No. 38,220	Cynthia L. Kanik	Reg. No. 37,320
Kevin J. Canning	Reg. No. 35,470	Theodore R. West	Reg. No. 47,202
Jane E. Remillard	Reg. No. 38,872	Shayne Y. Huff	Reg. No. 44,784
DeAnn F. Smith	Reg. No. 36,683	Hathaway P. Russell	Reg. No. 46,488
Peter C. Lauro	Reg. No. 32,360	Daniel B. Ko	Reg. No. 47,332
Jeanne M. DiGiorgio	Reg. No. 41,710	John S. Curran	Reg. No. P50,445
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Wherefore I petition that letters patent be granted to me for the invention or discovery described and claimed in the attached specification and claims, and hereby subscribe my name to said specification and claims and to the foregoing declaration, power of attorney, and this petition.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1-00

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